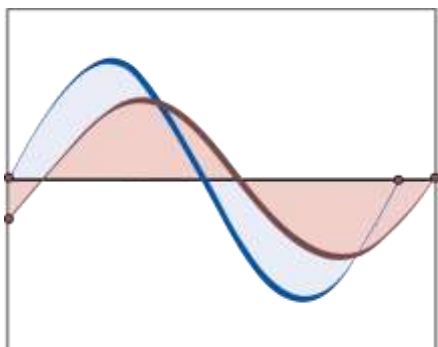


# Working Papers

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## Examining Reinvestment in Trinidad and Tobago

**Troy Taylor, Reshma Mahabir, Vishana Jagessar and Jason Cotton**  
Research Department

Over the years Trinidad and Tobago has been able to attract financial flows into the country in the form of Foreign Direct Investment (FDI). While for many years the bulk of FDI took the form of new investment in equity, in recent years there has been increased reinvestment of earnings by foreign firms in the domestic economy. This paper seeks to explore this emerging area in the literature by examining the factors which influence reinvestment in Trinidad and Tobago. An empirical investigation finds that that economic growth and the level of energy exports are positively related to the level of reinvestment, while political risk and exchange rate volatility are disadvantageous factors.

JEL Classification Numbers: C23, F21

Keywords: foreign direct investment, reinvested earnings, Trinidad and Tobago,

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# Examining Re-Investment in Trinidad and Tobago

Troy Taylor

Reshma Mahabir

Vishana Jagessar

Jason Cotton<sup>1</sup>

## 1. Introduction

The Trinidad and Tobago Government has long placed emphasis on encouraging foreign direct investment in the economy. Indeed during the early years of independence the Government followed Arthur Lewis' Industrialization by Invitation Strategy (Lewis 1950) to propel the country's economic growth. More recently the Government has signed various investment promotion agreements, included an investment chapter in negotiated trade agreements, and provided numerous incentives, both general and sector specific for investors. While the initiatives to attract investment tend to be focused on bringing in new firms and new financing, of late reinvestment of the profits of foreign firms already in the country has been growing. This paper seeks to highlight some of the factors that may be playing a role in this phenomenon, and thus seeks to provide the policy makers with another avenue to increase foreign direct investment (FDI) to Trinidad and Tobago.

The rest of the paper is presented as follows: section 2 provides some brief stylized facts on FDI in Trinidad and Tobago, while section 3 outlines the theoretical foundations on which the paper is based. Section 4 describes the data used in the estimations made by the paper, section 5 outlines the estimation method utilised, section 6 highlights the results of the study and section 7 concludes.

## 2. Stylized Facts on Foreign Direct Investment in Trinidad and Tobago

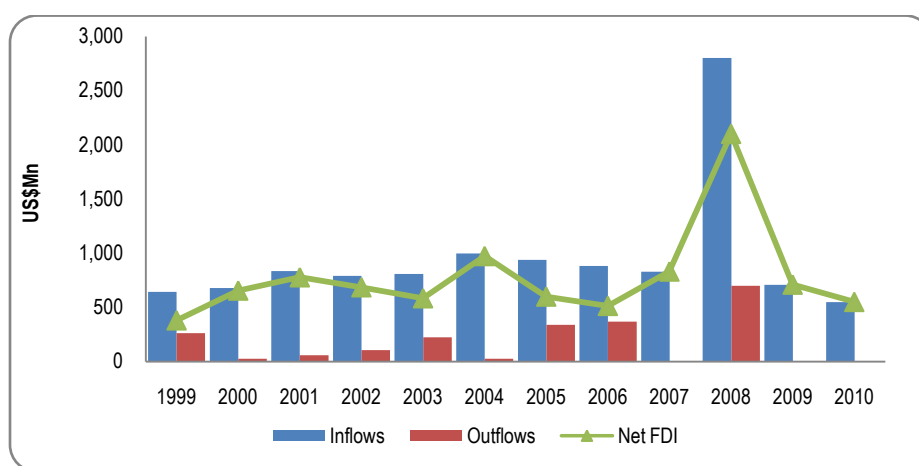
Trinidad and Tobago was the beneficiary of a significant influx of direct investment inflows during the 1970s. FDI inflows increased more than ten-fold from US\$99.5 million in 1973 to US\$1.02 billion in 1979. During the 1980s there was a decline in FDI, which perhaps was reflective of the change in government policy away from foreign investment and towards nationalisation. The 1990s saw a rapid growth of the natural gas sector and a resurgence of economic

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<sup>1</sup> Dr. Mahabir, Ms. Jagessar and Mr. Cotton are economists in the Research Department of the Central Bank of Trinidad and Tobago. Mr. Taylor was an intern from the University of the West Indies (Mona) sponsored by the Caribbean Regional Technical Assistance Centre (CARTAC) for the period June-August, 2012. The views expressed in this paper are those of the authors and not necessarily those of the Central Bank.

activity, which was accompanied by greater inflows of FDI. During most of the period 1999-2010 FDI inflows have largely followed a downward trend (See Chart 1). One anomaly in the recent decade is the record FDI inflows witnessed in 2008 with the acquisition of Royal Bank of Trinidad and Tobago (RBTT) Financial Group by the Royal Bank of Canada (RBC). Inflows fell in the subsequent year and contracted in 2010 (-22.5 per cent). At the end of 2010, FDI inflows stood at US\$549.4 million, 37.9 per cent lower than the average annual flows (US\$884.1 million) recorded in the period leading up to 2008 (2005-2007). Notably over the past four decades reported FDI outflows have been substantively smaller than FDI inflows, resulting in a positive net FDI position.

Chart 1: Trinidad and Tobago FDI Flows: 1999-2010



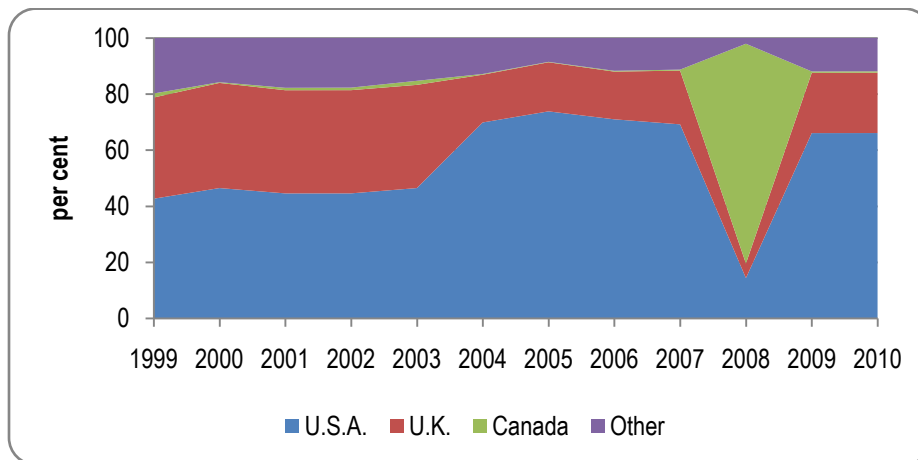
Source: Central Bank of Trinidad and Tobago (Various Years).

Over the past three decades, FDI to Trinidad and Tobago has been directed mainly towards the energy sector<sup>2</sup>. During the period 1999 to 2010 the dynamics of FDI inflows maintained this trend and the energy sector received an average of 85 per cent of annual FDI inflows to Trinidad and Tobago each year with the exception of 2008 in which the FDI inflows to the sector (21 per cent) were dwarfed by that of the financial sector (79 per cent) as a result of the RBC and RBTT amalgamation.

Trinidad and Tobago has been able to attract FDI flows from various sources around the world (See Chart 2). The United States (US) however, has consistently maintained its status as the major investor in the country with investments over the past 11 years averaging more than half (54 per cent) of total investment flows. The United Kingdom (UK) also represented a significant source of investment and was responsible for, on average, 25 per cent of total flows to Trinidad and Tobago. Meanwhile, Canada's investment activity in the last decade has been marginal with the only notable investment being that of RBC's acquisition of RBTT Financial Group in 2008.

<sup>2</sup> The energy sector comprises the petroleum industry along with the chemicals and non-metallic minerals industry.

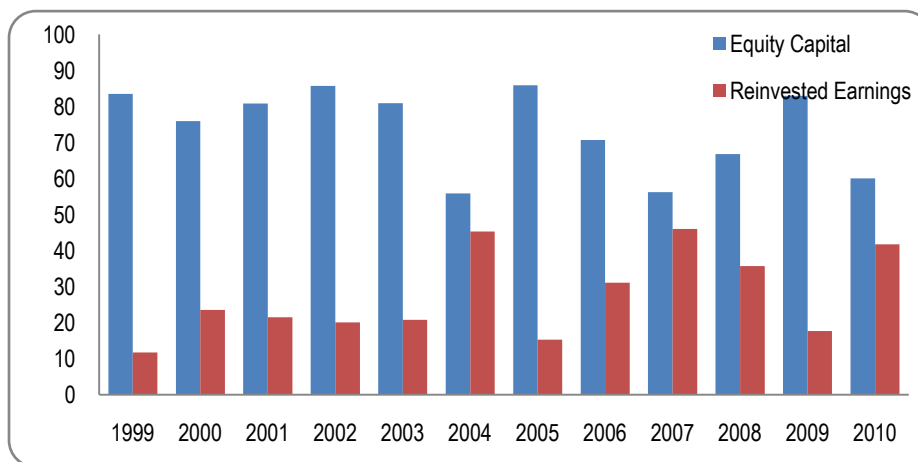
Chart 2: Proportion of Total FDI Inflows by Source Countries: 1999-2010



Source: Central Bank of Trinidad and Tobago (Various Years).

FDI flows to Trinidad and Tobago have been mainly driven by new investments as equity capital accounted for 73.8 per cent of FDI inflows on average for the period 1999 to 2010 (See Chart 3). However, in the latter part of the decade, reinvested earnings have become a more significant contributor to FDI inflows. In the earlier periods (1999 to 2005), investment inflows from reinvested earnings accounted for an average of 22.6 per cent (US\$205.8 million) of total inflows annually.

Chart 3: Proportion of FDI by its components



Source: Central Bank of Trinidad and Tobago (Various Years).

Reinvested earnings were responsible for more than one third (34.5 per cent) of the annual average FDI inflows for 2006-2010. Thus it is important to understand why firms would continue to invest their earnings in a country rather than repatriate it to their home base.

### 3. Literature Review

The literature examining the determinants of reinvestment by multinational companies (MNCs) has been sparse. One of the seminal papers on the issue is that of Hartman (1984) who examined the impact of taxes on different types of FDI. He found that FDI financed through retained earnings is significantly influenced by host country taxes. Other studies [Kaushik (2007) and Edwards, Kravet and Wilson (2012)] also tend to focus on taxes as a determinant of reinvestment of profits by foreign firms. Wolff (2006) investigated the determinants of FDI flows, including retained earnings, in the EU. He found that GDP, population and wages are insignificant factors influencing reinvestment flows, while the tax rates in the home country of the foreign firm had a significant impact on reinvestment decisions. Chakravarty and Xiang (2011) used information from a survey on factors influencing firms decision to reinvest profits in emerging economies to investigate the issue. They found that access to financing, property rights, extent of private ownership and relative competitive advantage play a significant role in a firm's reinvestment decision. Perhaps one of the most comprehensive framework on the determinants of retained earnings by foreign firms is that set out by Lundan (2006). She noted that reinvestment was influenced by three categories of factors:

i) those encouraging reinvestment: These include the availability of investment opportunities in a host economy. One measure of the availability of investment opportunities is the country's growth rate. Alternatively, the difference between the growth rate of the host country and home country is also highlighted as a possible measure of investment opportunity in the host country.

ii) those encouraging repatriation: The exchange rate is suggested to influence reinvestment through its impact on repatriation.<sup>3</sup> A sustained depreciation of the exchange rate should reduce the willingness to repatriate earnings and by extension increase reinvestment. Lundan (2006) notes for prospective investment it is the expectations of future changes in the exchange rate that is important. The taxation system within the host country has the ability to affect the level of reinvestment. An increase in the tax rates levied by host countries on repatriated earnings will increase the cost of repatriation for affiliates thereby making repatriating earnings less attractive..

iii) agency considerations: Factors influencing firms decisions on the size of dividend payments are also considered. It is expected that firms operating in countries with higher political risk or that are culturally or institutionally different from the home country of a MNC, would repatriate a higher level of income than firms operating in a similar environment to the home country. Thus there would be a lower level of reinvestment.

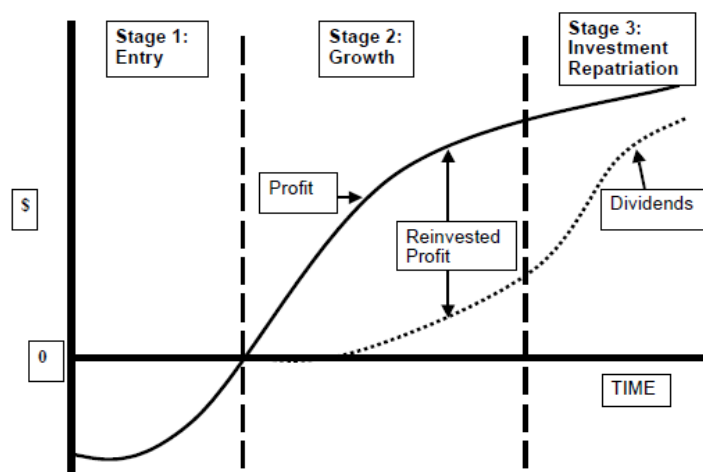
In addition to the factors described above Brada and Tomšík (2003) suggest that the level of reinvested earnings may be related to stage of the foreign firms in the life cycle of FDI. They hypothesize that there are three stages in

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<sup>3</sup> It follows that a firm chooses to either repatriate its earnings or reinvest.

the FDI life cycle. In stage one the MNC is likely to be investing new funds in the country and the affiliate is possibly making no profits and thus paying no dividends. In stage two the firm is making profits, and initially will reinvest these as working capital and/or to meet increased plant and equipment needs, and eventually begin to pay dividends. In stage three market share and profits will have stabilized in the host country and increased profits will be repatriated to be invested in other markets.

Chart 4: FDI Financial Life Cycle



Source: Brada and Tomšik (2003)

#### 4. Data and Descriptive Statistics

This analysis is based on annual data for the Trinidad and Tobago economy which spans the time period 1975-2010. Table 1 highlights the proxies that were used for each variable along with their sources.

Table 1: List of variables and data sources

Variable	Proxy	Source
Retained Earnings	Annual reinvested earnings by direct investors	Central Bank of Trinidad and Tobago
Investment Opportunities	TT-US and TT-UK Growth rate differential TT Growth rate	World Bank Indicators
Industry Income	Exports of the Energy sector	Central Bank of Trinidad and Tobago
Taxation (Cost of Repatriation)	Withholding Tax rate on intra-firm dividend payments	Ministry of Finance
Exchange Rate Volatility	TT\$/US\$ and TT\$/£	Central Bank of Trinidad and Tobago
Political Risk	Polity Scale Government consumption (% GDP)	Polity IV series World Bank Indicators

The difference between the economic growth rate of Trinidad and Tobago and that of the United States was used to represent the relative investment opportunities for MNCs. The choice of the TT-US differential is suitable given that the majority of the foreign direct investment in Trinidad and Tobago originate from the United States. Therefore, these US firms would represent the majority of potential reinvested activity. As a proxy for income earned by foreign firms, the export value for the energy sector is used. This can be justified given that the energy sector accounts for more than three quarters of FDI in the country, and many of the commodities produced in this sector are exported. The withholding tax rate on dividend payments made by foreign firms to their parent companies abroad is used as a proxy for the cost of repatriation. The choice of the proxy is suitable as dividend payouts represent the majority of repatriated funds by foreign firms in Trinidad and Tobago. The exchange rate of the local currency relative to the US dollar is used to proxy the exchange rate volatility since the US dollar is the global benchmark currency. The polity scale, which measures the level of democracy prevailing within a country's government regime<sup>4</sup>, is used to proxy political risk. In the case of Trinidad and Tobago during the period under review there was some positive movement on the scale, during 1975-1983 the country had a rating of 8, while during 1984-1996 the country had a rating of 9, and 1997 onwards was rated 10.

Table 2: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Retained Earnings (US\$ Mn)	184.6106	106.0983	35.19444	494.5
Growth rate (TT/US) (%)	0.225244	5.940432	-13.7194	11.88094
Growth rate (TT/UK) (%)	0.743593	5.843278	-12.8945	12.47798
Growth rate (TT) (%)	3.030605	5.397896	-9.2034	14.43354
Withholding Tax Rate (%)	12.36111	3.270236	5	15
Energy Exports (US\$ Mn)	3735.695	3694.194	1111.305	16481.77
Exchange Rate(TT/US) (TT\$)	4.598092	1.710344	2.1698	6.348
Polity Scale	9.138889	0.798312	8	10
Government Consumption (% of GDP)	13.72285	4.002654	9.33633	23.41756

During the sample period reinvested earnings by foreign firms averaged approximately US\$184 million while recording a minimum of US\$ 35 million and a maximum of US\$ 494 million. The difference in the GDP growth rates of Trinidad and Tobago and the United States ranged from a minimum of -13 per cent to a high of 11.9 per cent. The export revenue from energy sector recorded an average value of US\$ 3.7 billion while experiencing a high of US\$ 16.5 billion while repatriated income was taxed at a low of 5 per cent and at a high of 15 per cent for the sample

<sup>4</sup> The polity scale ranges from -10 for full autocracy to a value of 10 for full democracy.

period. As previously noted the tax rate used is the withholding tax rate. There was however only two recorded changes in the withholding tax rate in the period under review, with the lowest rate of 5 per cent being reported in 2008-2010. However it should be noted that the energy sector in Trinidad and Tobago is faced with a complicated tax structure with for example different rates for the types of commodities. During the period, the Trinidad dollar recorded an average of TT\$4.6/ US\$1 and TT\$7.75 to £1.

The correlation matrix in Table 3 confirms all but one of the expected relationships among reinvested earnings and their determinants. It shows that the growth rate differential of Trinidad and Tobago and the United States exhibits a moderately positive relationship with reinvested earnings by recording correlation coefficients of 0.57. Export revenue from the energy sector showed a strong positive relationship (0.81) with reinvested earnings while the nominal \$TT/\$US exchange rate was found to have a moderate positive relationship with reinvestment with a coefficient of 0.26. A weak link between political risk (as measured by the Polity Scale) and reinvested earnings was found with a correlation coefficient of 0.24. However a slightly stronger and negative correlation between government consumption and reinvestment is found. Withholding tax rates were found to be negatively related to reinvested earnings (-0.52), this finding may reflect the relative stability of the rates, as well as indicate that using statutory rates as opposed to effective tax rates (which make allowances for exemptions and deductions) may be an ineffective proxy.

Table 3: Correlation Matrix

	Reinvestment	Growth (TT-US)	Growth (TT-UK)	Growth (TT)	Withholding Tax	Energy Exports	Exchange Rate (TT/US)	Exchange Rate (TT/UK)	Polity Scale	Government Consumption
Reinvestment	1									
Growth (TT-US)	0.5662	1								
Growth (TT-UK)	0.5797	0.9586	1							
Growth (TT)	0.4762	0.9302	0.9258	1						
Withholding Tax	-0.5162	-0.3120	-0.2539	-0.2289	1					
Energy Exports	0.8106	0.3626	0.3454	0.2539	-0.6902	1				
Exchange Rate (TT/US)	0.2618	0.2879	0.1931	0.2695	-0.7969	0.4460	1			
Exchange Rate (TT/UK)	0.3878	0.4121	0.3294	0.3785	-0.7815	0.5788	0.9554	1		
Polity Scale	0.2434	0.1613	0.0744	0.1526	-0.7858	0.4916	0.9077	0.8596	1	
Government Consumption	-0.4105	-0.5742	-0.6185	-0.5450	0.5504	-0.4125	-0.5818	-0.6809	-0.3839	1



## 5. Estimation Method

The baseline model to be estimated is in semi-log form and is presented as follows:

$$RE_t = \alpha_0 + \beta_1 GDIF\_US_t + \beta_2 X\_EN_t + \beta_3 XRATE_t + \beta_4 WT_t + \beta_5 RISK_t \quad (A)$$

Where,

RE = logged values of reinvested earnings component of FDI (US\$ million);

GDIF\_US = the growth rate differential between Trinidad and Tobago and the United States;

X\_EN = the logged values of exports from the energy sector (US\$ million);

XRATE = the logged TT\$/US\$ exchange rate;

WT = the withholding tax rate on intra-firm dividend payments to parent companies; and

RISK = polity scale.

The Augmented Dickey Fuller (ADF) test revealed the presence of unit roots in the variables, and the variables were established as being I(1), hence the base model was then transformed to reflect the first differenced variables:

$$\Delta RE_t = \alpha_0 + \beta_1 \Delta GR\_US_t + \beta_2 \Delta X\_EN_t + \beta_3 \Delta XRATE_t + \beta_4 \Delta WT_t + \beta_5 \Delta RISK_t \quad (B)$$

This model was estimated using the Feasible Generalised Least Squares (FGLS) regression model with White's heteroskedastic standard errors to remove the serial correlation and correct for heteroskedasticity among the residuals. Table 4 provides the estimated results of the baseline model. Additionally, several other model variations were presented using different proxies for the variables to highlight the robust nature of the results. Given that historically the UK has been the second largest source of investment in Trinidad and Tobago the growth rate differential between Trinidad and Tobago and the United Kingdom and the TT\$/£ exchange rate were used as an alternate proxies of country level investment opportunities and exchange rate volatility respectively. Additionally government consumption (as per cent of GDP) is used as an alternative proxy for political risk and the Trinidad and Tobago growth rate is also used as an alternative proxy for investment opportunities.

## 6. Results

Model 1 shows that investment opportunities and the level of income earned within the energy sector are significant and positive determinants of reinvested earnings by direct investment enterprises in Trinidad. The results suggest that a 1 per cent year on year change in the growth rate can result in a 2.6 per cent year on year change in

reinvested earnings. More significantly a 1 per cent year on year change in the income earned by the energy sector may result in a 0.63 per cent year on year change in the level of reinvestment by foreign investors *ceteris paribus*. Models 2 and 3 further confirm the robustness of these results with the use of alternate measures of investment opportunities. These results show that a 1 per cent year on year change in the growth differential of Trinidad and Tobago and the United Kingdom may result in a 3.3 per cent year on year change in reinvested earnings and a 1 per cent increase in the year on year growth rate of the Trinidad and Tobago economy may result in a 4.1 per cent increase in year on year reinvestment by foreign investors. Notably neither political risk (Polity Scale) nor exchange rate risk (TT/US\$) are found to be significant factors in determining the level of reinvestment.

The robustness of the results is supported by the findings from Model 4, which uses alternative proxies for exchange rate volatility and political risk. Model 4 highlights that investment opportunities, income earned by an industry with direct investors, political risk and the volatility of the local currency with respect to the pound sterling were all significant determinants of reinvested earnings by foreign investors in Trinidad and Tobago. The results state that a 1 per cent year on year change in the income earned by the energy sector may result in a 0.59 per cent year on year change in the level of reinvestment by foreign investors. Additionally, a 1 per cent depreciation of the TT\$/£ exchange rate may result in a -1.18 per cent year on year change in the level of reinvestment. Furthermore, a 1 per cent year on year change in the Trinidad and Tobago growth rate and the government consumption (political risk) may result in a year on year change in reinvestment of 4.6 per cent and -4.7 per cent respectively. Wolff (2006) notes that a larger (and unproductive) government sector in the host country will reduce investment opportunities and thus a negative coefficient is expected. Trinidad and Tobago's economy is largely energy driven and thus it is not surprising that increased reinvestment in the economy by foreign firms, the majority of which are in the energy sector, and economic growth are positively related.

Across all the models the results show that the rate of withholding tax has no significant impact on the level of reinvestment by direct investment enterprises. This unexpected result could be related to withholding tax being an inadequate measure of the tax burden of firms, particularly given that the tax regime for the energy sector has many different tax rates. Further tax exemptions and credits will not be captured using this proxy. In addition the results may be affected by the fact that the rates were relatively static during the period under review. Lundan (2006) suggests that the use of marginal tax rates<sup>5</sup> would be a better measure. Also surprising was the insignificance of the TT\$/US\$ exchange rate. However this result may be explained by the lack of variability in the exchange rate during the sample period. Interestingly the TT\$/£ exchange rate risk variable was significant and negative, suggesting that exchange rate expectations may be better reflected by changes in the pound sterling than the US dollar.

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<sup>5</sup> The use of marginal tax rates was not possible given the unavailability of data and the use of a macro level model.

Table 4: Regression results  
Dependent Variable: Logged Reinvested Earnings

Variables	Model 1	Model 2	Model 3	Model 4
Constant	0.0351 (0.0583)	0.0421 (0.0524)	0.0484 (0.0558)	0.0278 (0.0433)
TT-US Growth differential	0.0259 (0.0127**)			
Withholding Tax rate	0.0005 (0.0343)	0.0039 (0.0307)	-0.0197 (0.0419)	-0.0116 (0.0487)
Energy Exports	0.6239 (0.2301***)	0.5508 (0.2034***)	0.5363 (0.2196**)	0.5870 (0.2123***)
TT\$/£				-1.1811 (0.5845**)
TT\$/US\$	-0.8423 (0.7569)	-0.8077 (0.7325)	-1.0980 (0.7687)	
Polity Index	-0.0771 (0.1725)	-0.1244 (0.1591)	-0.1647 (0.1690)	
TT-UK Growth differential		0.0333 (0.0130***)		
TT Growth Rate			0.0410 (0.0153**)	0.0410 (0.0168**)
Government Size				-0.0467 (0.0226**)
N	35	35	35	35
Adj R <sup>2</sup>	0.2870	0.3339	0.3507	0.4475
DW	2.1905	2.2488	2.2435	2.2131

Note: Model fitted with White's Heteroskastic standard errors. All independent variables are in logged form except for the growth rates, polity and government size. Significance levels are denoted as \*\*\* for 1% level, \*\* for 5% level.

## 7. Conclusion

This paper presented a very simplified linear regression model using FGLS in an attempt to identify the determinants of reinvestment in Trinidad and Tobago based on the guidelines of Lundan (2006) in what is a relatively untouched area of FDI literature. For the policy makers, who are in charge of the development and implementation of the country's investment policy, this paper highlights that continued economic growth is one of the key factors encouraging reinvestment in the country. Additionally increased income in the energy sector is likely to be accompanied by increased reinvestment of profits in the domestic economy. The paper also found that the depreciation of the local currency to the pound sterling has a significant impact in determining the level of reinvestment by foreign investors; and increased government consumption is likely to lead to lower levels of reinvestment. While this simplified study does well to explain a great deal of the dynamics of reinvested earnings by

foreign firms there are several limitations. Additionally this country level model is not able to capture firm level factors that should explain a significant portion of the dynamics of reinvestment.

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